ALTER BLDG. 2855 FOR TEMPORARY AGE SHOP

MECHANICAL PLAN NOTES
Drawing Sheet #6

3 September 2003

THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

1. New 12' x 18' Office.

2. New 12' x 24' Tool Crib.

3. New Thru-the-Wall Heat Pump. Heat Pump shall provide not less than 8,800 BtuH of cooling and 8,000 BtuH heating. Heat Pump shall be Friedrich model WY09A33E or approved equal. Provide wall sleeve with outside grill for ease of maintenance and mounting. The contractor shall coordinate with the Heat Pump supplier to determine the size of the wall sleeve, operating voltage, phase and amperage and plug configuration. Ensure that condensate from the unit will drain to the outside of the building. The contractor shall modify the location and layout of the north wall of the Office from what is shown on the drawing to ensure that the maximum wall thickness for the wall sleeve is not exceeded.

4. Install 3 each natural gas fired Radiant Tube Heaters in the locations shown on the drawing. See Notes 5, 6 and 7, below. The Radiant Tube Heaters shall be Gordon-Ray model BH 100 by Roberts Gordon Corp., or approved equal, and shall have an input Btu/Hr rating of 100,000 Btu/Hr. The radiant tubes shall be 16 gauge, heat treated aluminized steel, 4 inches in dia. and 40 feet long. The reflectors over the radiant tubes shall be 0.024 mill-finished aluminum. The burner unit shall operate on 120 volts, AC current and shall include fully automatic, three-try direct spark electronic ignition with 100% shut off. The burners shall also include factory provided stainless steel flex gas line connectors with appliance shut-off valve. A high-pressure valve, for pressure testing the gas piping, shall be installed before the appliance shut-off valve. Gas inlet pressure is to be 5 to 14 inches of water column. The Radiant Tube Heaters shall be built to ANSI Standard #Z83.20, be approved by CSA and have a three year warranty on all parts.

   Exhaust shall be piped outside of the building. Flue materials shall be as per heater manufacturer's recommendations. The flue outside wall cap shall be 4" dia. Tjernlund or approved equal. Combustion air shall be brought from outside of the building to the burner through a 4" dia. metal duct with screened outside wall cap.

   The heaters shall be controlled by wall mounted, low voltage thermostats with night set-back feature. Install thermos stats in accordance with manufacturer's directions.

5. Install the southwest Radiant Tube Heater unit by suspending it from the 1st roof purlin in from the south building wall. Center the unit between the west building wall and the center building structural column / beam frame with the burner toward the new tool crib. Suspend the unit with 3/16 inch chain or in accordance with heater unit manufacturer's recommendations. Position the reflector so that it is tilted at a 45 deg. angle in toward the middle of the shop area. Suspend the unit as high as practical above the floor, but ensure that all clearance requirements from combustibles are met.

6. Install the northwest Radiant Tube Heater unit by suspending it from the 1st roof purlin in from the north building wall. Center the unit between the west building wall and the center building structural column / beam frame with the burner toward the overhead door. Suspend the unit with 3/16 inch chain or in accordance with heater unit manufacturer's recommendations. Position the reflector so that it is tilted at a 45 deg. angle in toward the middle of the shop area. Suspend the unit as high as practical above the floor, but ensure that all clearance requirements from combustibles are met.

7. Install the east Radiant Tube Heater unit by suspending it from the roof purlins centered in the east bay with the burner toward the overhead door. Suspend the unit with 3/16 inch chain or in accordance with heater unit manufacturer's recommendations. Position the reflector so that it is tilted at a 45 deg. angle in toward the middle of the shop area. Suspend the unit as high as practical above the floor, but ensure that all clearance requirements from combustibles are met.

8. Natural Gas Service Entrance. Transition 1-1/2 inch dia. polyethylene plastic underground natural gas pipe up from underground and to steel pipe with a 1-1/2 inch dia. wide sweep, 90 deg. anodeless riser by Perfection Corp or approved equal. The gas carrying steel pipe nipple shall meet the requirements of A53 pipe. The anodeless riser shall meet or exceed the requirements of ASTM D-2513, Category 1, ANSI B1.20, US DOT Part 192 and CSA B 137.4. Attach the #10 insulated solid copper tracer wire to the anodeless riser with duct tape.

   After the anodeless riser, install concentric reducing pipe fittings to reduce the 1-1/2 inch dia. pipe to the proper size for the gas pressure regulator. Steel gas piping shall conform to ASME B36.10M and shall be installed by qualified workmen in conformance with applicable provisions of NFPA 54, AGA Manual. Malleable-iron threaded fittings shall conform to ASME B 16.3. Pipe joint sealing compounds shall be listed in UL Gas & Oil Dir, Class 20 or less. Paint gas piping and pipe fittings with not less than 2 coats of rust proof paint, color Safety Yellow. Next install a plug valve that can be re-lubricated under pressure. The plug valve shall be Mueller 175 psi Luboseal Meter Valve or approved equal. The plug valve shall meet applicable parts of DOT / CFR Title 49, part 192 and ASTM B 16.3. Wrap the tracer wire around the piping and hook it into the hole in the plug valve handle.

   After the plug valve, install a self-cleaning, "Y" type Strainer with a stainless steel, 20-mesh screen. The strainer shall be Mueller #11-MFCB or approved equal.

Next install an appropriately sized Gas Pressure Regulator. The Base's gas distribution system operates at 20 to 25 psi. The contractor shall coordinate with the Radiant Tube Heater Unit supplier to obtain information needed to determine the correct gas pressure regulator orifice size, spring strength, etc. and gas piping sizes. To reduce maintenance problems and spare parts storage, the new Gas Pressure Regulator shall be the same Equimeter, model # 043-182, as the other gas meters on Base. Install pipe unions on both sides of the pressure regulator and an 8" long dirt leg' with end cap, where the gas piping turns up to enter the building wall.

9. Building Gas Piping System. Steel gas piping shall conform to ASME B36.10M and shall be installed by qualified workmen in conformance with applicable provisions of NFPA 54, AGA Manual. Malleable-iron threaded fittings shall conform to ASME B 16.3. Pipe joint sealing compounds shall be listed in UL Gas & Oil Dir, Class 20 or less. The contractor shall coordinate with the Radiant Tube Heater Unit supplier to determine the appropriate gas piping sizes. Install an 8" long dirt leg, with end cap, and a pipe union just in front of the piping connection to the flexible piping provided with the heater unit. Suspend gas piping, as high as practical, from building roof purlins. The selection and application of supports for gas piping shall conform to the requirements of MSS SP-58 and MSS SP-69. Spacing of supports for gas piping shall conform to the requirements of NFPA 54. The Building Gas Piping System within the building shall be electrically continuous and bonded to a grounding electrode as required by NFPA 70. Paint gas piping and pipe fittings with not less than 2 coats of rust proof paint, color Safety Yellow. Pressure test the Building Gas Piping System between the first fitting after the gas pressure regulator and the high-pressure valve at each heater unit. Fill the piping with air or an inert gas to a minimum pressure of 10 pounds gauge for a period of not less than 30 minutes without showing any drop in pressure as specified in NFPA 54. After pressure testing is completed, the Building Gas Piping System shall be fully purged. Do not be purged the piping into the combustion chamber of the heater unit. The open ends of the piping system shall not discharge into confined spaces or areas where there are ignition sources, unless the safety precautions recommended in NFPA 54 are followed.

10. Install a hinged, sheet metal cover, 14 gauge, on the 4' x 4' frame of the existing exhausting fan. The cover shall be capable of being opened and closed by a person standing on the floor and shall have devices on it that will hold it closed and open. Submit shop drawings of the cover, including opening and closing method and hold closed / open devices.

11. Install hinged, 14 gauge, sheet metal covers on the 3' x 3' existing air intake louvers. The covers shall be capable of being opened and closed by a person standing on the floor and shall have devices on them that will hold them closed and open. Submit shop drawings of the covers, including opening and closing method and hold closed / open devices.